



# 6SA7, 6SA7-GT/G

## PENTAGRID CONVERTER

6SA7  
6SA7-GT/G

Heater	Coated Unipotential Cathode	
Voltage	6.3	a-c or d-c volts
Current	0.3	amp.
Direct Interelectrode Capacitances:	6SA7	6SA7-GT/G
Grid #3 to All Other Electrodes (R-F Input)	9.5 <sup>▲</sup>	11 <sup>▲▲</sup> $\mu$ f
Plate to All Other Electrodes (Mixer Output)	12 <sup>▲</sup>	11 <sup>▲▲</sup> $\mu$ f
Grid #1 to All Other Electrodes (Osc. Input)	7 <sup>▲</sup>	8 <sup>▲▲</sup> $\mu$ f
Grid #3 to Plate	0.13 max. <sup>▲</sup>	0.5 max. <sup>▲▲</sup> $\mu$ f
Grid #3 to Grid #1	0.15 max. <sup>▲</sup>	0.4 max. <sup>▲▲</sup> $\mu$ f
Grid #1 to Plate	0.06 max. <sup>▲</sup>	0.2 max. <sup>▲▲</sup> $\mu$ f
Grid #1 to Shell, Grid #5, and All Other Electrodes except Cathode	4.4	- $\mu$ f
Grid #1 to All Other Electrodes except Cathode & Grid #5	-	5 $\mu$ f
Grid #1 to Cathode	2.6	- $\mu$ f
Grid #1 to Cathode & Grid #5	-	3 $\mu$ f
Cathode to Shell, Grid #5, and All Other Electrodes except Grid #1	5	- $\mu$ f
Cathode and Grid #5 to All Other Electrodes except Grid #1	-	14 $\mu$ f
Maximum Overall Length	2-5/8"	3-5/16"
Maximum Seated Height	2-1/16"	2-3/4"
Maximum Diameter	1-5/16"	1-5/16"
Bulb	Metal Shell MT-8	T-9
Base	<div><div>{ Small Wafer Octal 8-Pin</div><div>{ Intermed. Sh. Octal 8-Pin</div></div>	
Pin 1	<div><div>6SA7, Shell, Grid #5</div><div>6SA7-GT/G, No Conn.</div></div>	
Pin 2	Heater	
Pin 3	Plate	
Pin 4	Grids #2 & #4	
Pin 5	Grid #1	
Pin 6	<div><div>6SA7, Cathode</div><div>6SA7-GT/G, Cathode &amp; Grid #5</div></div>	
Pin 7	Heater	
Pin 8	Grid #3	
Mounting Position	Any	
Maximum And Minimum Ratings Are Design-Center Values		
CONVERTER SERVICE		
Plate Voltage	300 max. volts	
Grids #2 & #4 Voltage	100 max. volts	
Grids #2 & #4 Supply Voltage	300 max. volts	
Grid #3 Voltage	0 min. volts	
Plate Dissipation	1.0 max. watt	
Screen Dissipation	1.0 max. watt	
Total Cathode Current	14 max. ma.	
<div><div>■ In circuits where the cathode is not directly connected to the heater, the potential difference between heater and cathode should be kept as low as possible.</div><div>▲ With shell connected to cathode.</div><div>▲▲ With external shield connected to cathode.</div><div>For self-excited oscillator.</div><div>← Indicates a change.</div></div>		



BOTTOM VIEW (BR)



BOTTOM VIEW (G-8AD)

Jan. 1, 1943

RCA VICTOR DIVISION  
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

DATA



## 6SA7, 6SA7-GT/G PENTAGRID CONVERTER

(continued from preceding page)

**Characteristics:**

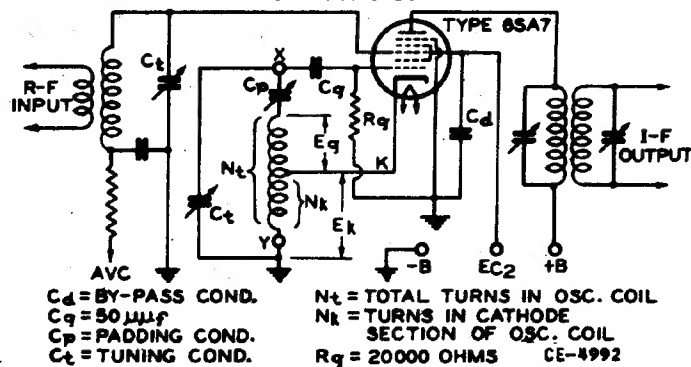
Characteristics:	Self-excitation*		Separate Excitation		
Plate Voltage	100	250	100	250	volts
Grids #2 & #4 Volt.	100	100	100	100	volts
Grid #3 (Control) Volt.	0	0	-2	-2	volts
Grid #1 Resistor	20000	20000	20000	20000	ohms
Plate Res. (Approx.)	0.5	1.0	0.5	1.0	megohm
Conversion Transcond.	425	450	425	450	μmhos
Conversion Transcond. (Approx.) ‡	2	2	2	2	μmhos
Plate Current	3.3	3.5	3.3	3.5	ma.
Grids #2 & #4 Current	8.5	8.5	8.5	8.5	ma.
Grid #1 Current	0.5	0.5	0.5	0.5	ma.
Total Cathode Current	12.3	12.5	12.3	12.5	ma.

NOTE: The transconductance between Grid #1 and Grids #2 & #4 connected to plate (not oscillating) is approximately 4500  $\mu$ mhos under the following conditions: Grids #1, #3, and shell at 0 volts; Grids #2 & #4 and plate at 100 volts.

\* Characteristics are approximate only and are shown for a Hartley circuit with a feedback of approximately 2 volts peak in the cathode circuit.

† With Grid #3 bias of -35 volts.

TYPICAL SELF-EXCITED CONVERTER CIRCUIT  
FOR TYPE 6SA7



The license extended to the purchaser of tubes appears in the License Notice accompanying them. Information contained herein is furnished without assuming any obligations.

Jan. 1, 1943

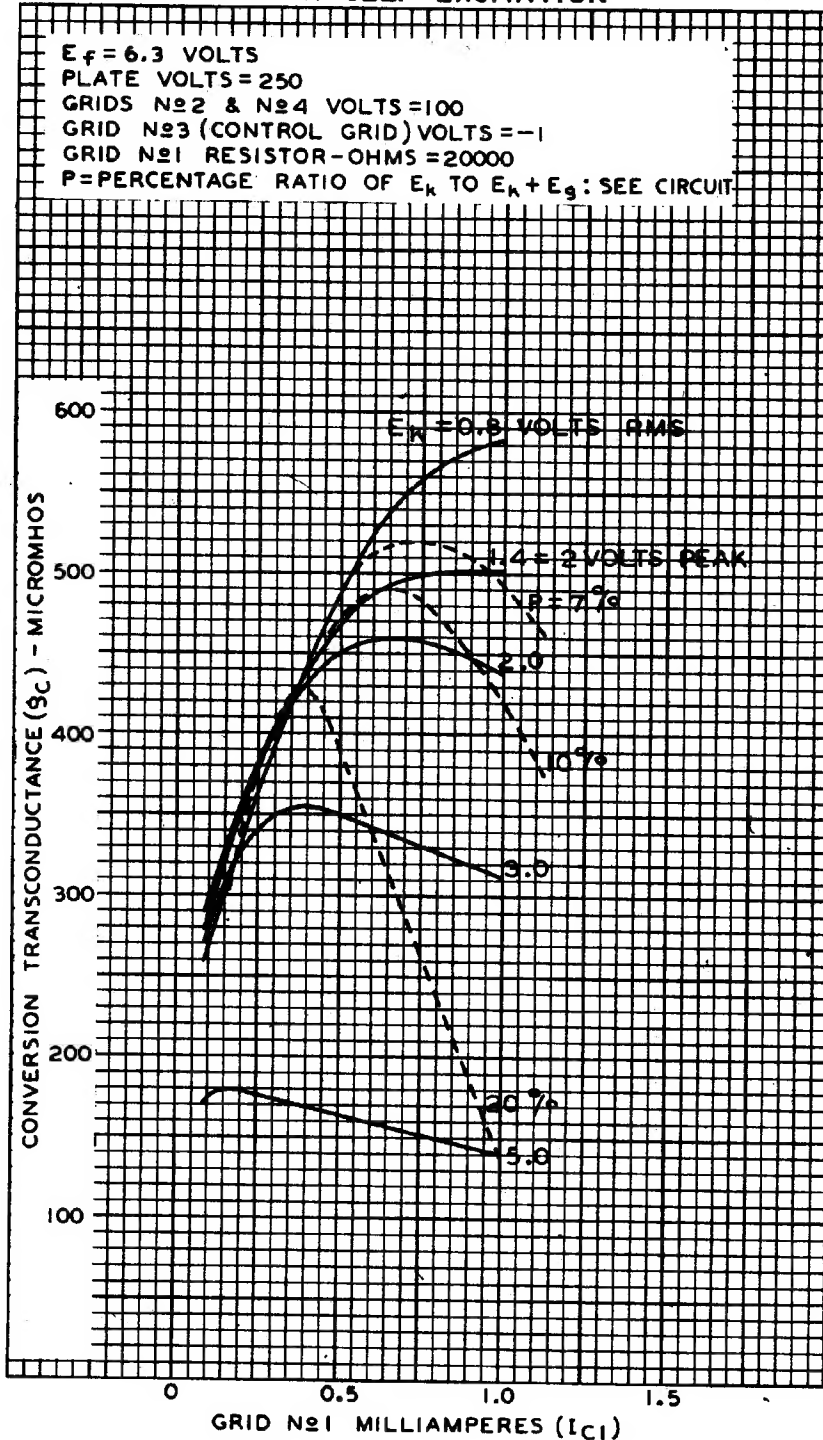
**RCA VICTOR DIVISION**  
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

DATA



6SA7

# OPERATION CHARACTERISTICS WITH SELF-EXCITATION



NOV. 2, 1938

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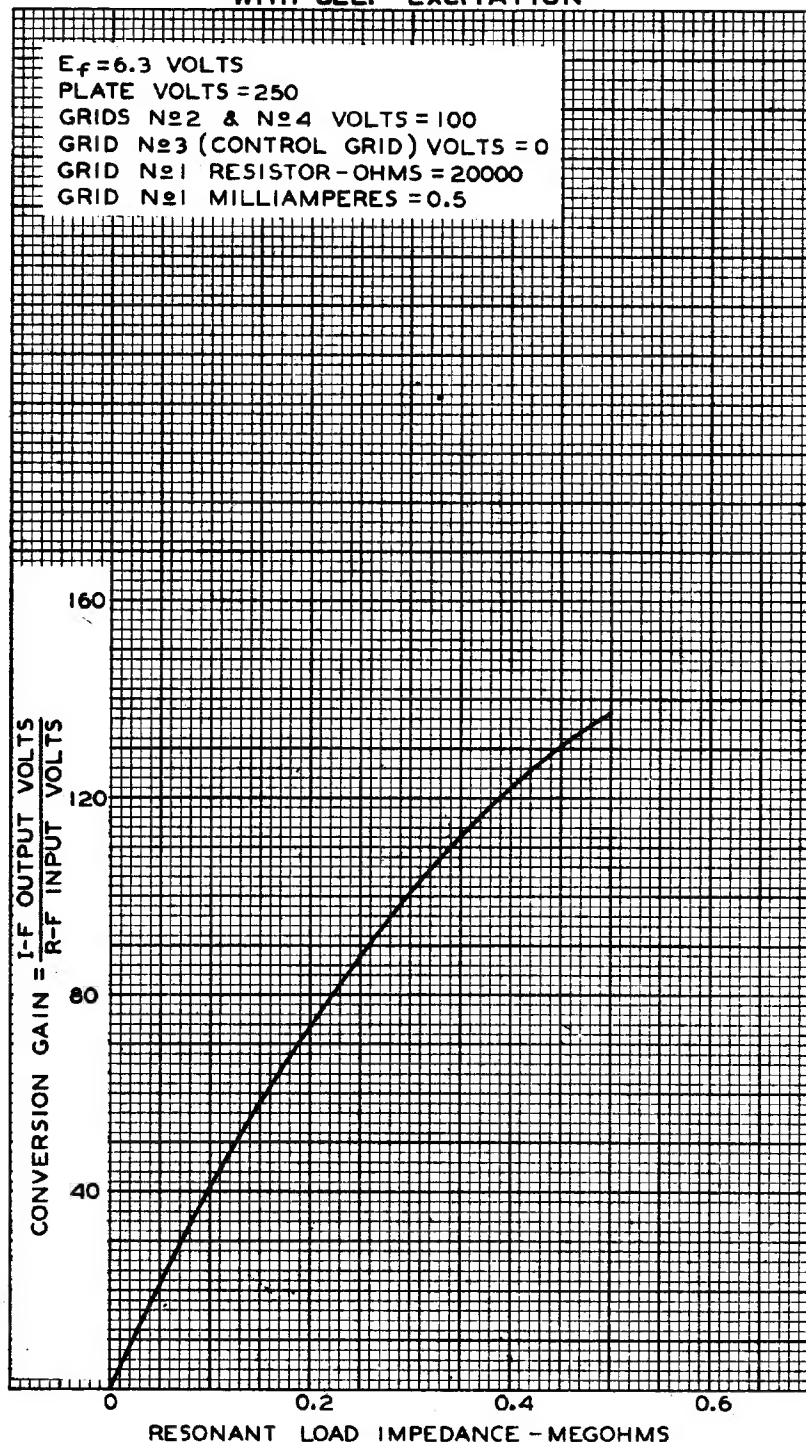
92C-4993

6SA7



6SA7

# OPERATION CHARACTERISTIC WITH SELF-EXCITATION



APR. 25, 1941

RCA RADOTRON DIVISION  
RCA MANUFACTURING COMPANY, INC.

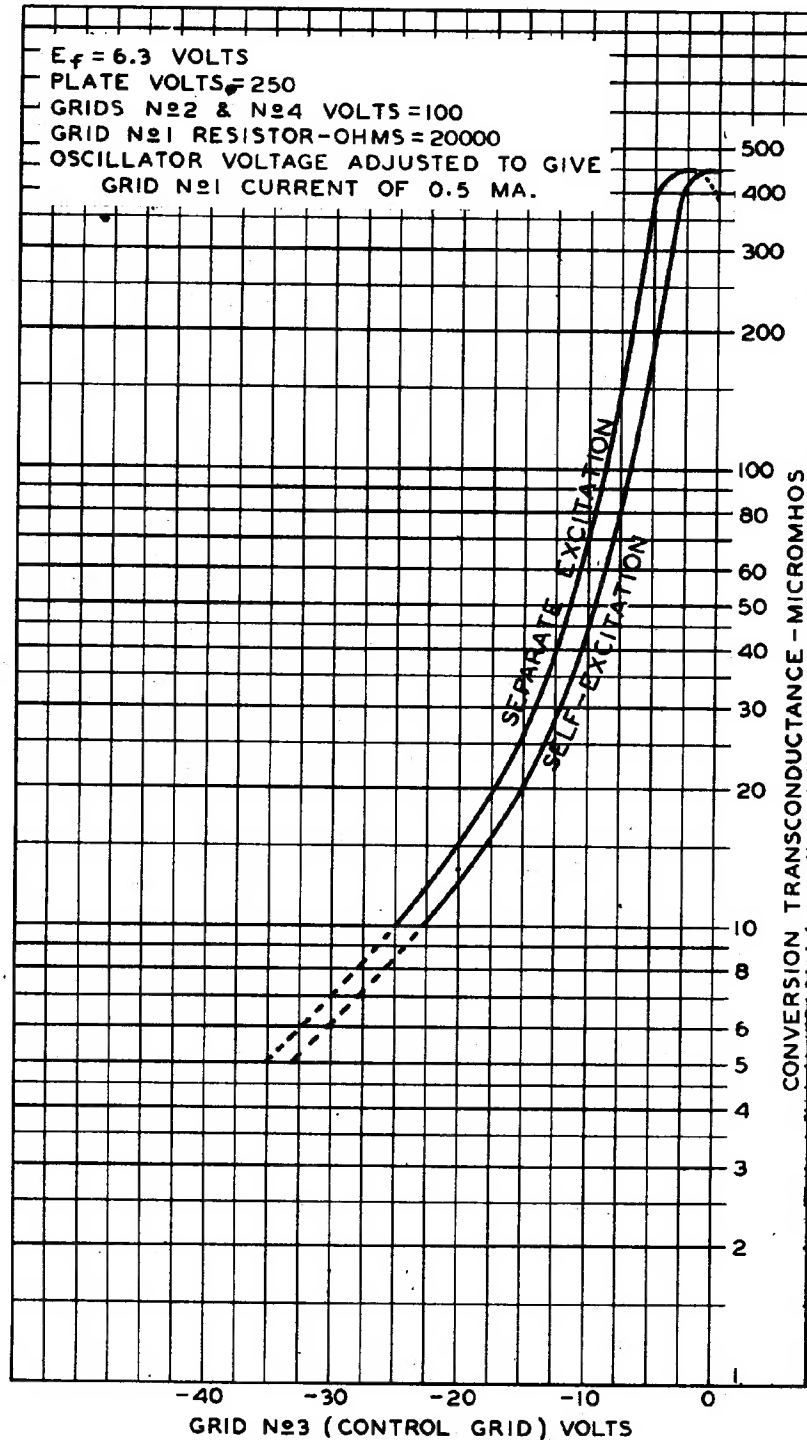
CE-4994



6SA7

6SA7

# OPERATION CHARACTERISTICS



OCT. 25, 1938

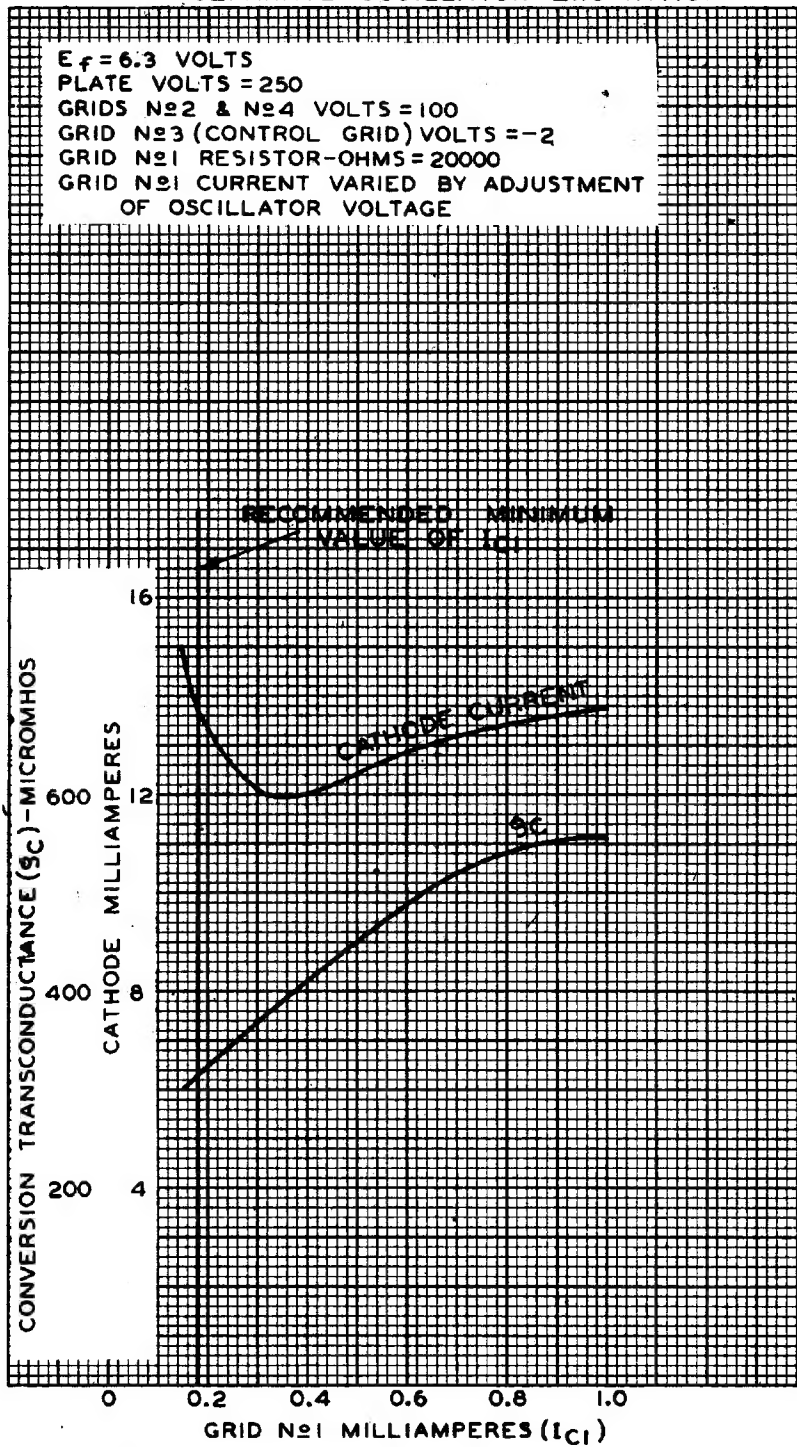
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92C-4989

6SA7



6SA7

OPERATION CHARACTERISTICS  
WITH SEPARATE OSCILLATOR EXCITATION

APR. 24, 1941

RCA RADIOTRON DIVISION  
RCA MANUFACTURING COMPANY, INC.

92C-4990R1